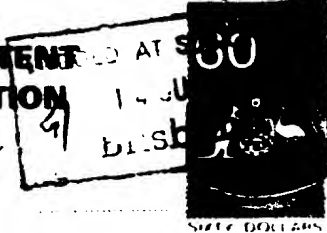


APPLICATION FOR A STANDARD PATENT
OR A STANDARD PATENT OF ADDITION

PATENT OFFICE
Form 1
on 9



Insert full
name(s) of
applicant(s)
Insert address(es)
of applicant(s)

(71) I/we VINCENT HENRY GUERRINI

of 173 CHATSWOOD ROAD, DAISY HILL 4128, QUEENSLAND.

Insert title
of invention

(54) hereby apply for the grant of a ☐ standard patent
or ☐ patent of addition for an invention entitled

IMPROVEMENTS IN THE INHIBITION OF LICE IN SHEEP.

(tick appropriate
box)

which is described in the accompanying ☒ provisional
or ☐ complete specification

Insert name of
actual inventor

(72) The actual inventor of the said invention is/are VINCENT HENRY GUERRINI

Insert address
for service of
noticing
Australia

(74) My/our address for service is 173 CHATSWOOD ROAD DAISY HILL 4128
QUEENSLAND.

Attorney Corle

*THESE SECTIONS ARE ONLY TO BE COMPLETED WHERE APPLICABLE

for Convention
cases only

(ONLY TO BE USED IN THE CASE OF A CONVENTION APPLICATION)

Details of basic application(s)

(31) Number of basic application

(33) Name of Convention country in which basic application was filed

ISO Code

(32) Date of basic application

for Divisional
applications only

(ONLY TO BE USED IN THE CASE OF A FURTHER APPLICATION MADE BY VIRTUE OF SECTION 51)

(62) Number of original application

Person by whom made

for Patents of
addition only

(ONLY TO BE USED IN THE CASE OF AN APPLICATION FOR A PATENT OF ADDITION)

I request that the patent may be granted as a patent of addition to the patent applied for on

(61) Application No. Patent No.

in the name of

I request that the term of the patent of addition be the same as that for the main invention or so much of the
term of the patent for the main invention as is unexpired

Insert day, month
and year from
signature

Dated this 14th day of JULY

19 87

Signature of
applicant or
Australian
attorney

TO APPLICATION ACCEPTED AND AMENDMENTS

ALLOWED 21 12 90

(Signature)
(Signature)

THE COMMISSIONER OF PATENTS

This form must be accompanied by either a provisional specification (Form 9 and true copy) or by a complete
specification (Form 10 and true copy).

Patents Act 1952

DECLARATION IN SUPPORT OF AN APPLICATION FOR A PATENT

In support of the Application made by

VINCENT HENRY
GUERRINIfor a patent for an invention entitled IMPROVEMENTS
IN THE INHIBITION OF LICE IN
SHEEP.I, VINCENT HENRY GUERRINI
of 173 CHATSWOOD ROAD, DAISY HILL 4128
do solemnly and sincerely declare as follows - 9.10

(1) I am the applicant for the patent.

(or, in the case of an application by a body corporate)

1. I am authorized by

the applicant for the patent to make this declaration on its behalf

(2) I am the actual inventor of the invention.

(or, where a person other than the inventor is the applicant)

2

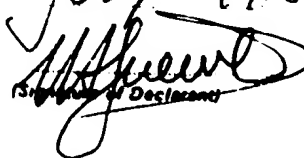
of

is the actual inventor of the invention and the

facts upon which I am
the is entitled to make the application are as follows

Declared at BRISBANE this 14TH

day of

JULY 1987

(Signature of Declarant)

TO:

THE COMMISSIONER OF PATENTS.

(IMPORTANT Cross out inapplicable words in the above Form.)

(12) PATENT ABRIDGMENT (11) Document No. AU-B-11220/88
(19) AUSTRALIAN PATENT OFFICE (10) Acceptance No. 608281

(54) Title
INHIBITION OF LICE IN SHEEP USING NEEM OIL

International Patent Classification(s)
(51)⁴ **A61K 035/78**

(21) Application No. : 11220/88

(22) Application Date : 14.07.87

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(43) Publication Date : 19.01.89

(44) Publication Date of Accepted Application : 28.03.91

(60) Related to Provisional(s) : PI3083

(71) Applicant(s)
VINCENT HENRY GUERRINI

(72) Inventor(s)
VINCENT HENRY GUERRINI

(57) Claim

1. A pesticidal composition for the inhibition and prevention of lice comprising azadirachtin or azadirachtin containing extracts including neem extracts with wool wax or fatty acids or anti-oxidants or acids.

8. A method of inhibiting and preventing lice comprising applying a composition of azadirachtin or azadirachtin containing extracts including neem extracts with wool fat or fatty acids or anti-oxidants or acids to the pests or their surroundings or locus.

608281

This document contains the
amendments made under
Section 49 and is correct for
printing.

VINCENT HENRY GUEFFINE

COMMONWEALTH OF AUSTRALIA

The Patents Act 1952 - 1969

COMPLETE SPECIFICATION FOR THE INVENTION ENTITLED:

IMPROVEMENTS IN THE INHIBITION OF LICE

This invention is described in the following statement



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IMPROVEMENTS IN THE INHIBITION OF LICE

THIS INVENTION relates to improved methods of prevention and inhibition of lice and preparations used in the method.

5 Lice infestations are common throughout the world and are the cause of irritation of the skin which stimulates scratching, rubbing, licking with consequential damage to fleece and hides, loss of weight gain and meat production and in humans is a health
10 hazard.

Conventional, current methods for the prevention and inhibition of lice in sheep include the application of potentially toxic compounds or insecticides
15 such as organophosphates and organochlorines, two or three or more times each year.

Although the above mentioned products are effective in inhibiting lice in sheep for periods of up to 3 or 4 months, none are effective beyond 4 to 5 months
20 as applied by conventional jetting, dipping or spraying, because the applications can be diluted by rain and leached out of the fleece and inactivated by the environment in the fleece and in the atmosphere

The most common sheep lice are *Damalinea*
25 *ovis*, a biting louse, *Linognathus* *ovillus*, a sucking louse, *L. Africanus*, *L. pedalis* and *L. Stenopsis* which are also sucking lice.



Conventional lice insecticides are fairly to extremely toxic to persons and animals and their constant use has led to the development of insect resistance.

5 From the above mentioned it can be appreciated that lice infestations are a serious condition and that none of the current methods to control and/or inhibit lice are satisfactory.

10 Azadirachtin-rich extracts of the seeds of the neem tree *Azadiracta indica* A. Juss (Meliaceae) contain a range of limonoid chemicals, such as the tetranortriterpenoid, azadirachtin, which are active as insect antifeedants, growth disruptors and insecticides but effects of azadirachtin against lice have not been described.

15 It is a preferred objective of this invention to provide a preparation of azadirachtin and/or azadirachtin containing extracts from the neem tree to prevent and inhibit the development of lice and a composition to extend the presence of azadirachtin in or on a locus.

20 It is a further objective of this invention to provide a method and a composition used in the method to inhibit the oxidation of azadirachtin and/or azadirachtin containing extracts.

25 The invention is a composition of azadirachtin or azadirachtin containing oils and/or extracts to inhibit lice.

In one embodiment of the invention the composition of azadirachtin is blended with wool wax, an acid, an anti-oxidant, a detergent and water.



A preferred preparation is azadirachtin and/or azadirachtin containing extracts blended with any combination of wool wax fatty acids, including oleic, linolenic, linoleic, palmitic, capric, lauric, myristic, palmitic, stearic, arachidic, beheric, lignoceric, cerotic, montanic, their iso series, their ante-iso series and/or sulphonc, acetic, hydrochloric, sulphuric, citric, proprionic, salicilic or weak acid derivatives such as esters and anhydrides, antioxidants including butyl-hydroxy-anisole, vitamin C, vitamin E and vitamin A a detergent and water.

Particular embodiments of the invention will now be described with reference to the following Tables in which:-

Table 1 - Mean plus or minus standard deviation number for lice found in 5 partings of wool on each side of a sheep. The sheep was treated on the left side with a composition of 2.5 millilitres neem oil containing 10% azadirachtin. The right side was not treated. The composition was spread onto the skin and wool.

		Days after treatment					
		0	3	20	60	110	200
Lice counted							
Treated		21+8	3+5	0	0	0	0
Not treated		16+6	21+12	14+5	35+9	22+3	17+3



and where,

Table 2 - Mean plus or minus standard deviation
for number of lice counted in 5 wool partings on each side
of a sheep. The sheep was sprayed on the left side with a
composition of 2.5 ml neem oil containing 10% azadirachtin.
The right side was not treated.

Lice counted	Days after treatment					
	0	3	20	60	110	200
Treated	11+6	0	0	0	2+2	0
Not treated	17+5	21+8	14+3	25+2	31+4	12+4

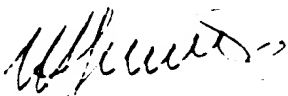


THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A pesticidal composition for the inhibition and prevention of lice comprising azadirachtin or azadirachtin containing extracts including neem extracts with wool wax or fatty acids or anti-oxidants or acids.
2. A pesticidal composition according to claim 1 wherein the fatty acids are oleic or linoleic or linolenic or palmitic or capric or lauric or myristic or palmitic or stearic or arachidic or behenic or cerotic, or montanic acid.
3. A pesticidal composition according to Claim 1 wherein the anti-oxidants are alpha-tocopherol or ascorbic acid (Vitamin C).
4. A pesticidal composition according to claim 1 wherein the acids are boric acid or propionic or salicylic acids.
5. A pesticidal composition of any of the preceding claims further comprising diazinon or organophosphates or a detergent and water.
6. A pesticidal composition according to claim 1 comprising from 0.1 to 99 parts by weight azadirachtin containing extracts, 1 to 99.8 parts by weight wool wax, 1 to 99.8 parts by weight linoleic acid, 1 to 99.8 parts boric or salicylic acid, 1 to 99.8 parts alpha tocopherol or ascorbic acid.

7. A pesticidal composition according to claim 1 comprising from 1 to 80 parts by weight azadirachtin containing extracts, 20 to 99 parts by weight wool wax, 20 to 99 parts by weight linoleic acid, 20 to 99 parts boric or salicylic acid and 20 to 99 parts alpha tocopherol or ascorbic acid.
8. A method of inhibiting and preventing lice comprising applying a composition of azadirachtin or azadirachtin containing extracts including neem extracts with wool fat or fatty acids or anti-oxidants or acids to the pests or their surroundings or locus.
9. A method according to claim 9 wherein lice includes the eggs, larvae and adult forms of lice.

Dated this 12th day of December, 1990



VINCENT HENRY GUERRINI